A STUDY OF MANAGEMENT OF STRESS AMONG MEDICAL STUDENTS

A

RESEARCH PROPOSAL

SUBMITTED TO THE

UNIVERSITY OF MUMBAI

FOR THE DEGREE

OF

DOCTOR OF PHILOSOPHY

IN

MANAGEMENT

BY

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UNDER THE GUIDANCE OF

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YEAR 2023

INDEX

SR. NO.	CONTENTS	PAGE NOS.
1.	INTRODUCTION	4
2.	META-ANALYSIS / REVIEW OF LITERATURE	**6**
3.	RESEARCH PROBLEM	**10**
4.	RESEARCH OBJECTIVES	**10**
5.	RESEARCH HYPOTHESIS	**11**
6.	RESEARCH METHODOLOGY	**13**
7.	SCOPE OF THE STUDY	**21**
8.	SIGNIFICANCE OF THE STUDY	**21**
9.	LIMITATIONS OF THE STUDY	**22**
10.	PLAN OF PROPOSED RESEARCH WORK	**22**
11.	CHAPTERISATION SCHEME	**23**
12.	REFERENCES	**25**
13	ANNEXURE – QUESTIONNAIRE FOR STUDENTS	**31**

A STUDY OF MANAGEMENT OF STRESS AMONG MEDICAL STUDENTS

Abstract:

The researcher wishes to undertake a comparative study of the stress levels faced by medical students while studying a Bachelor of Medicine and Bachelor of Surgery (MBBS) course in government and Private Medical Colleges in Mumbai and the Thane Region.

The study aims to gain an insight into the level of stress and its consequences and suggest possible remedial measures to overcome it. Medical education in India is more challenging as there is a big gap between the demand for medical admission and the supply of medical seats. It is for this reason that many Indian students go out of the country to pursue their medical education. As per the National Testing Agency (NTA), 14,10,754 applicants apply for admission against 66,000 available medical seats in India. (NTA-NEET 2019 statistics).

As a result, students face various problems and some of them leave in between the course, resulting in financial losses, students also face psychological problems like anxiety, lack of sleep, insomnia, and suicidal attempts, which adversely affect their future career prospects.

Therefore, this study is being undertaken to analyze the various factors responsible for the stress levels (Mild, Moderate and Severe level stress) and suggest management strategies for the students and the colleges to overcome the stress issues among medical students.

Keywords: Gender, Anxiety[1], Self-Efficacy[2], Stressors[3], MBBS Students, stress management.

[1] A feeling of worry, nervousness, or unease about something with an uncertain outcome.

[2] Self-efficacy, a construct grounded in social cognitive theory, can be generally defined as personal beliefs in one's capabilities. Self-efficacy beliefs determine how people feel, think, motivate themselves and behave.

[3] Something that causes a state of strain or tension.

1. INTRODUCTION

Stress is a pressure or force caused either by the external situation or within an individual in the form of worry, anxiousness, regret, deterrence, and showing low confidence. In these stressful situations, the person is not able to manage the challenges and feels depressed. To some people, the effect is minimal, which means they can manage the pressure, while in some other people, the effect is massive and has a hostile effect (R. Hemamalini, et. al. 2005).

Stress is any type of change seen in a person that causes physical, emotional, or psychological strain. Stress is the body's response to anything that requires attention or action. Every individual has experienced stress to some degree. The way a person responds to stress makes a big difference to their overall well-being. **(Elizabeth Scott, 2020).**

Stress observed by the MBBS aspirants students at the time of seeking admission in MBBS Courses

Many students aspired to become a doctor. To take admission in MBBS Course, students are required to apply for the National Eligibility Entrance Test (NEET) for admission to a medical course. NEET is one of the main entrance tests conducted in India for medical courses. This is the entrance test compulsory for the students to qualify for admission in Medical colleges across India for MBBS and BDS courses. A student who has completed 10+2 needs to clear the entrance test to pursue their career in the medical field. The test is conducted by the National Testing Agency. There is a total of 535 medical colleges in India approved by the Medical Council of India (MCI). It is further categorized into Government Medical Colleges and Private Medical Colleges **(NEET 2017).**

Students who have taken admission to the science stream and chosen Physics, Biology, Chemistry, and English subject are eligible for the MBBS study in India. The score for eligibility is 50% at 10+2 level. The score criteria for MBBS for SC/ST/OBC is 40% in 10+2. The age limit for admission is 17 years to 25 years. A NEET scorecard is mandatory for MBBS admission in India. MBBS in India is followed by a 3-year post-graduate medical course in surgical or medical specialties (MS or MD) **(NEET 2017).**

MBBS is one of the undergraduate medical degree programs for students who wish to pursue a career in the field of medicine after Class 12 (Science Stream). The duration of the course is

five and a half years to complete the degree, including one year of rotational internship at hospitals, health centers, and health camps organized by non-profit organizations. The MBBS course includes the study of Human Anatomy, Human Cytology, Medicine, Pharmaceuticals, Drug Formulation & Effect, and Method of Surgery. A person holding an MBBS degree becomes a certified medical practitioner.

While there is a large number of medical colleges spread across the country, MBBS colleges in Maharashtra are highly rated by students because of their infrastructure and research facilities. Admission to the medical colleges in Maharashtra is offered to candidates based on the scores obtained in the National Eligibility Entrance Test, or NEET.

The MBBS course fees in Government Medical Colleges are affordable as compared to Private Medical Colleges, as Private Medical Colleges charge very high course fees. There are a total of 60 medical colleges in Maharashtra. There are vast differences in medical education facilities when we compare Government Medical Colleges and Private Medical Colleges in terms of the college environment, professors, college amenities, students taking admission from diverse cultures, medical equipment, hostel facilities, mess/canteen, etc. **(NEET 2017).**

Profile of some of the leading Medical Colleges in Mumbai and the Thane Region

	1	**2**	**3**	**4**	**5**	**6**	**7**
Particulars	**Grant Medical College**	**LTM Medical College**	**Topiwala National Medical College, Mumbai**	**Seth Gordhandas Sunderdas Medical College and KEM Hospital**	**H.B.T. Medical College And Dr. R.N. Cooper Municipal General Hospital**	**Mahatma Gandhi Mission Institute of Health Sciences (MGMIHS) - Deemed University**	**KJ Somaiya Medical College**
Year of establishment	1845	1964	1921	1926	1950	1989	1991
Location	Mumbai	Mumbai	Mumbai	Mumbai	Mumbai	Navi Mumbai	Mumbai
Affiliation	Maharashtra University of Health Science	Maharashtra University of Health Science	Maharashtra University of Health Science	Maharashtra University of Health Science	Maharashtra University of Health Science	Deemed University	Maharashtra University of Health Science
Approval	Medical Council of India	Medical Council of India	Medical Council of India	Medical Council of India	Medical Council of India	Medical Council of India	Medical Council of India

Rankings (2020)	Ranked 11 among Indian Medical colleges by Outlook India	17	Not mentioned	Top 25 in Mumbai	Top 15 in Mumbai	Not mentioned	35
All entrance exams accepted	NEET UG, NEET PG	NEET, NEET PG, NEET SS	NEET, NEET PG, NEET SS	NEET, NEET PG, NEET SS	NEET, NEET PG, NEET SS	NEET, NEET PG, NEET SS	NEET, NEET PG, NEET SS
Number of courses	30	30	36 courses	50+ courses across 3 stream	11 courses	29 courses	6 courses
MBBS course fees	6.10 lakh	₹ 4.83 L	₹ 4.65 L	5,07,000	₹ 5.09 L	Rs. 90 lakh	Rs. 34 lakh
MS Course Fees	2.50 lakh	₹ 3.55 L	₹ 3.16 L	88,750	--	Rs. 75 lakh	Rs. 24.69 lakh
MD Course fees	2.50 lakh	₹ 3.55 L	₹ 3.16 L	88,750	₹ 3.21 L	Rs. 75 lakh	Rs. 24.69 lakh

2. META-ANALYSES / REVIEW OF LITERATURE

Sr. No.	Category	Authors	Findings
1	Type of stress	Arria et. al, 2009	The following type of stress is described by the author Mild. Moderate, Acute, Eustress, and Distress
2	Comparing stress levels between Males and Females students studying medical course	SNB Inam, Saqib A, Alam E, 2003	From the study, it is found that female students are more prone to anxiety and depression
		Salgar, 2015	Females students considering inferior to males students
		Wege et al. 2016	Female medical students presented higher scores of depressiveness than male students
		Caroline Little, 2021	Females students have more severe stress than males students
		Hossain and Wahab, 2016	Females students show a higher level of stress as they promote in class

		Fawzy and Hamed, 2017	Identify the different levels of stress in female students in academics, living conditions and year of study.
		Paro et al., 2014	1350 medical students' stress levels analysed. Women had lower scores in physical and psychological domains of Quality of life (po0.05); among medical studies Burnout scores were different between the sexes, with higher emotional exhaustion in women and depersonalization values in men (po0.05)
3	Study of stress factors among the medical students	Dr. Bhavin U Pandya et. al, 2012	From the study, it is found that there are various stress factors such as academics, examination, different institution settings, cultural background, etc. causing stress among the students
		Y. Thejaswi, Chandu, and Kandati, 2013	Identified the following stress factors such as getting admission to a reputed college. Academic workload, length of course curriculum and getting a good grade in the examination
		Dr. Bhargava D., Trivedi, et. Al. 2013	Identified the following stress factors as Financial stress, examination stress, lack of family support, hostel atmosphere, social networking
		Fares J, Al Tabosh H, et al. 2016	Identify that tremendous academic workload is one of the factors of stress
		Wahed and Hassan, 2018	Students with low socioeconomic status are highly prone to stress due to low self-esteemed
		Ahrberg K et. al 2012	Medical students may not give importance to sleep when it comes to meeting their academic obligations. As a result, individuals start to have trouble sleeping, especially in the weeks before a test. Sleep is essential for cognitive function as well as physical and mental health, and medical students' academic

			performance may suffer if they lack sleep.
		Sreeramareddy CT et. al 2007	Several things might make medical school a very stressful setting. Numerous academic prerequisites, a lengthy curriculum, and numerous, challenging, and different kinds of exams are a few of these issues.
		Taylor et al., 2013	1039 undergraduate students studies. The chronic insomnia group had worse sleep patterns, fatigue, depression, anxiety, stress, and Quality of life: Quality of Life QoL
4	Symptoms of stress	Jeanne Segal et. al, 2015	Identified 4 major types of symptoms of stress among the students as Cognitive symptoms, Emotional symptoms, Physical symptoms, Behavioural symptoms
		Dresler M., 2012	Numerous studies have revealed a physiological link between stress and sleep and the hypothalamo-pituitary-adrenal (HPA) axis, which may account for the close interaction between these two elements.
		Pagnin and Queiroz et. al. 2015	193 medical students: Stress and Social Relationship: The emotions experienced in the academic environment are known to be related to important outcomes, such as academic adaptation and success, and also to the student's health and well-being. However, factors such as anxiety and stress can lead to poor academic performance and illness.
		Domantay, 2014	Studied 527 medical students: Depression, stress, and burnout were associated with Quality of life -SF-36 with lower Quality of life among medical students
5	Impact of stress	Wimsatt et al. 2015	Identify the impact of stress such as not being able to concentrate on their study, do not sharing their problems with their teachers and friends. Avoid

			taking treatment and use smoking and drugs to fight stress.
		Seema Tanaji, 2015	Identification of the stress at the earlier stage and providing effective counseling will help to prevent academic stress and mental health disorder.
		Elliot and Tan, 2010	Hesitate to seek medical help from the intern and fear losing her practice license
		Karineh Tahmassian et. al., 2011	If students have high tolerance capacity then stress is taken as positive stress and if students have a low tolerance capacity may be vulnerable to stress and face depression
		Saipanish R., 2003	Numerous nations, including Pakistan (60 percent), Thailand (61 percent), Malaysia (42 percent), and the United States (57 percent), have documented high levels of stress among medical students. Locally, King Saud University reported a 63 percent prevalence of stress among medical students, while King Faisal University reported a 53 percent prevalence.
		Menon B. et. al, 2015	Researchers from the United States, Australia, India, and other nations have discovered that kids with bad sleep habits do poorly on exams and are more depressed than their peers.
		Kleiveland et al. 2015	227 nursing students: 33.9% had moderate or high levels of stress, negatively associated with Quality of Life among medical students.
		West et al, 2011	Studied 19831 medical residents - Burnout, high levels of emotional exhaustion, and depersonalization were reported by 51.5%, 45.8%, and 28.9% respectively.

3. RESEARCH PROBLEM

Based on the Meta-Analyses/review of literature, it is found that there is a high number of students pursuing medical courses across the National and International universities that have undergone some types of stressors during their studies. Therefore, it is imperative need to analyse the key factors responsible for the stresses among the MBBS medical students studying in Mumbai and Thane Region Medical colleges. These students have undergone various types of physical and mental stresses, which may have a severe impact on their education as medical students.

This research proposal is proposed to identify the causes/sources of stress among medical students studying in Mumbai and the Thane Region. Stress levels are classified as mild stress, moderate acute stress, and excessive chronic stress. From the various kinds of literature reviews, it is found that many students undergo some sort of stress depending upon the circumstances they face during their education. To the best of my knowledge, there are no research studies found which identify the stressors and analyse the stress level of medical course students studying at medical colleges in Mumbai. This research will help to identify the various stressors and levels of stress experienced by medical students during their course of study.

Thus, this research thesis focuses on the root cause of the stress among the students and tries to suggest some remedial methods and reformations in the medical education policy by the medical colleges, the Medical Council of India, and other important stakeholders so that students achieve their dream of becoming doctors and serving society.

4. OBJECTIVES OF THE PROPOSED RESEARCH:

1. To study the impact of **Academic workload** on the stress levels of the MBBS students studying at Government Medical Colleges.
2. To study the impact of **Academic workload** on the stress levels of the MBBS students studying at Private Medical Colleges.
3. To study the impact of **Teacher's teaching pedagogy and learning** on the stress levels of MBBS students studying at Government Medical Colleges.

4. To study the impact of **Teacher's teaching pedagogy and learning** on the stress levels of MBBS students studying at Private Medical Colleges.
5. To analyze gender **differences in the stress levels of MBBS students** studying at Government Medical Colleges.
6. To analyze gender **differences in the stress levels of MBBS students** studying at Private Medical Colleges
7. To investigate the level of stress among **students studying at the different academic levels** of MBBS students at Government Medical Colleges
8. To investigate the level of stress among **students studying at the different academic levels** of MBBS students at Private Medical Colleges
9. To investigate the impact of **financial problems of student's families on their level of stress** at Government Medical Colleges
10. To investigate the impact of **financial problems of student's families on their level of stress** at Private Medical Colleges

5. HYPOTHESIS OF THE PROPOSED RESEARCH

Hypothesis Nos.	**Type of Hypothesis**	**Statement**
Hypothesis – 1	Null Hypothesis (H0)	There is no significant impact of the academic workload on the stress levels of the MBBS students studying at **Government Medical Colleges**
	Alternate Hypothesis (H1)	There is a significant impact of the academic workload on the stress levels of the MBBS students studying at **Government Medical Colleges**
Hypothesis – 2	Null Hypothesis (H0)	There is no significant impact of the academic workload on the stress levels of MBBS students studying at **Private Medical Colleges**
	Alternate Hypothesis (H1)	There is a significant impact of the academic workload on the stress levels of MBBS students studying at **Private Medical Colleges**
Hypothesis – 3	Null Hypothesis (H0)	There is no significant impact of **Teacher's teaching pedagogy and learning** on the stress levels of MBBS students studying at Government Medical Colleges.

	Alternate Hypothesis (H1)	There is a significant impact of **Teacher's teaching pedagogy and learning** on the stress levels of MBBS students studying at Government Medical Colleges.
Hypothesis – 4	Null Hypothesis (H0)	There is no significant impact of **Teacher's teaching pedagogy and learning** on the stress levels of MBBS students studying at **Private Medical Colleges.**
	Alternate Hypothesis (H1)	There is a significant impact of **Teacher's teaching pedagogy and learning** on the stress levels of MBBS students studying at **Private Medical Colleges**
Hypothesis – 5	Null Hypothesis (H0)	There are no significant gender **differences in the stress levels of MBBS students** studying at Government Medical Colleges.
	Alternate Hypothesis (H1)	There are significant gender **differences in the stress levels of MBBS students** studying at Government Medical Colleges.
Hypothesis – 6	Null Hypothesis (H0)	There are no significant gender **differences in the stress levels of MBBS students** studying at **Private Medical Colleges**
	Alternate Hypothesis (H1)	There are significant gender **differences in the stress levels of MBBS students** studying at Government Medical Colleges.at **Private Medical Colleges**
Hypothesis – 7	Null Hypothesis (H0)	There are no significant differences in the level of stress among **students studying at the different academic levels** of MBBS students at Government Medical Colleges
	Alternate Hypothesis (H1	There are significant differences in the level of stress among **students studying at the different academic levels** of MBBS students at Government Medical Colleges
Hypothesis – 8	Null Hypothesis (H0)	There are no significant differences in the level of stress among **students studying at the different academic levels** of MBBS students at **Private Medical Colleges**
	Alternate Hypothesis (H1)	There are significant differences in the level of stress among **students studying at the different academic levels** of MBBS students at **Private Medical Colleges**
Hypothesis – 9	Null Hypothesis (H0)	There are no significant differences in the **financial problems of student's families on their level of stress** at Government Medical Colleges

	Alternate Hypothesis (H1)	There are significant differences in the **financial problems of student's families on their level of stress** at Government Medical Colleges
Hypothesis – 10	Null Hypothesis (H0)	There are no significant differences in the **financial problems of student's families on their level of stress** at **Private Medical Colleges**
	Alternate Hypothesis (H1)	There are significant differences in the **financial problems of student's families on their level of stress** at **Private Medical Colleges**

6. RESEARCH METHODOLOGY

a. Research Design: This would be an empirical and exploratory type of research. A cross-sectional study will be conducted to examine the relationships between independent and dependent variables through self-administered survey questionnaires. The administered questionnaires will be analysed post-administration to explore the stressors. The impact of the stressors (independent variables) on the academic stress level of students will be measured on SPSS through correlation, regression analysis, and other related statistical techniques such as ANOVA tests, Chi-square and t-test will be used to analyse the collected data. In addition to this, several structured and unstructured interviews would be conducted with experts/specialists in the subject area. Thus, the study would be both quantitative as well as qualitative. For qualitative research, the thematic analysis[4] would be used as a technique.

b. Sources of Data

Primary Data Collection: In the Primary Data Collection Procedure, online and offline data will be collected using a questionnaire. Information regarding this survey will be distributed to all registered students at the Government and Private Medical Colleges in Maharashtra state.

Secondary Data: Secondary data will be collected from different sources available for the study such as medical journals, hospital sites, articles, medical reports, institution websites, etc.

[4] **Thematic analysis** is a good approach to research where you're trying to find out something about people's views, opinions, knowledge, experiences or values from a set of qualitative data – for **example**, interview transcripts, social media profiles, or survey responses.

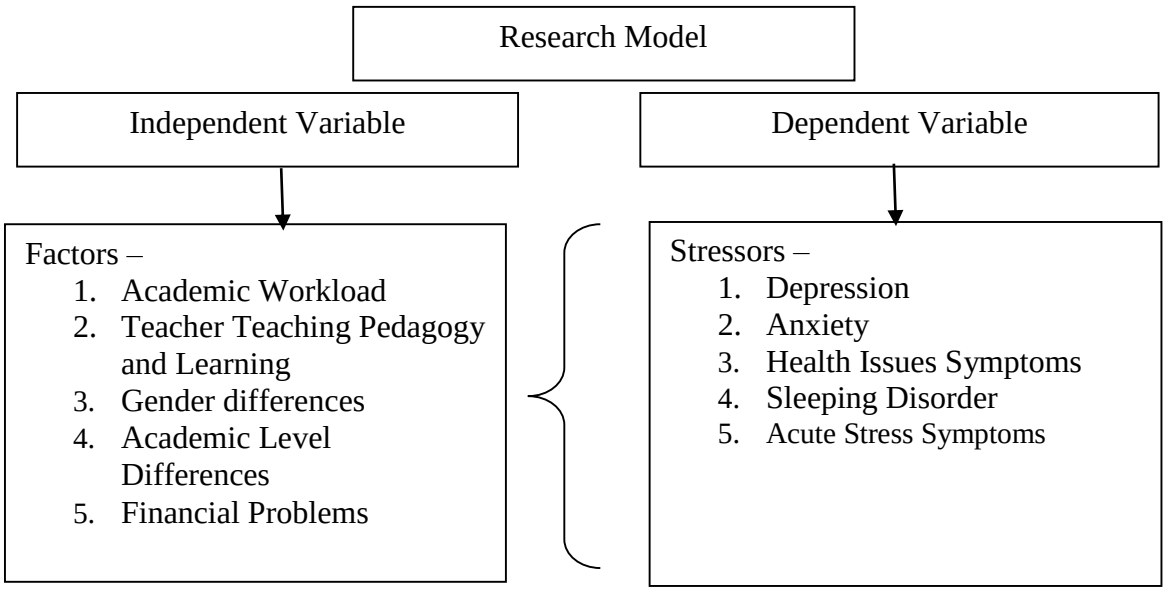
c. Instrument of Data Collection

Questionnaires will be prepared to study the stress factors among the students. A questionnaire constructed will be a set of close-ended questions and administered among the students selected for the research.

RESEARCH FRAMEWORK

d. Types of Variables:

- **Independent Variables:** Stressors
- **Dependent Variables:** Stress Level



The **independent variable** is the variable the experimenter manipulates or changes, and is assumed to have a direct effect on the dependent variable. For example - the Independent variable would be stress and the dependent variable would be the heart rate.

Independent Variables for the study are a financial burden, Academic pressure, examination fear, Interpersonal relationship with peer groups and teachers, ragging, bullying, phobia, etc.

The **dependent variable** is the variable being tested and measured in an experiment and is 'dependent' on the independent variable. An example of a dependent variable is depression symptoms, which depends on the independent variable (type of therapy).

Dependent Variables for the study are Anxiety, Depression, Stress, Mental disorder, Health issues, and demotivation for the study.

e. Sampling Method and Sample size

Population Frame - All the students of selected medical colleges in Mumbai and Thane Region in Govt. and Private Medical Colleges.

It is proposed to use a simple random sampling method. The researcher will use the predetermined questionnaire and shall be circulated it to obtain the responses.

Sr. No.	Government Medical Colleges	Intake Capacity
1	Lokmanya Tilak Municipal Medical College, Mumbai	150
2	Grant Medical College, Mumbai	200
3	Seth G. S Medical College, Mumbai	180
4	Rajiv Gandhi Medical College and Chhatrapati Shivaji Maharaj Hospital, Thane	60
5	HBT Medical College and Dr. R N Cooper Municipal General Hospital, Mumbai	150
6	Topiwala National Medical College, Mumbai	120
	Total	860

Sr. No.	Private Medical Colleges	Intake Capacity
1	KJ Somaiya Medical College & Research, Mumbai	50
2	Terna Medical College, Navi Mumbai	150
3	Dr. D. Y. Patil Medical College and Research Centre	250
4	MGM Medical College, Navi Mumbai	150
	Total	600

The first-year students' strength of the above-selected colleges, is approximately 1500. Therefore total students' strengths of all the 4 years course are approximate would be approximately 5000 students. **I would like to take a sample size of approximately 400 students for my Ph.D. work**. From Govt. medical college – 200 students and Private Medical College – 200 students.

1. **Infinite Sampling Population -** Formula for determining the sample size of the infinite population (Cochran, W. G., 1977).

   S = Z2 * p*(1-P) / m2

   Sample: Sample size for infinite population proportion assumed to be 50% = 0.5.

   M – Margin of error

   Z score is determined based on the confidence level.

   Confidence level = the probability that the value of a parameter falls within a specified range of values.

   Confidence level = Z value

   90% - 1.645

   95% - 1.960

   99% - 2.576

   If we consider a 95% confidence level then the Z score is 1.96.

   The margin of error is a small amount that is allowed for in case of miscalculation or change of circumstances. Generally, we take the margin of error as 5% = 0.05

   Therefore applying the values in the formula

   Z – 1.96, P – 0.5, m – 0.05

   S = Z2 * p*(1-P) / m2

   S = (1.96)2 * (0.5)2*(1-0.5) / (0.05)2

   S = 3.8416 x 0.25 / 0.0025

   S = 384.16.

   Therefore the sample size for the infinite population is 384

2. **Sampling formula for Finite population**

   We must adjust the sample size to the required population for example, if we want to adjust the sample size to a 1,00,000 population. Then we use the following formula for the adjusted sample size.

   Adjusted Sample size – [S / 1+ (S-1)] / P]

   S = 384.16 / 1 + [(384.16 – 1) / 100000]

   S = 384.16 / 1.0038316

   S = 382.69 => 383

   Therefore the sample size for the finite population is 383

f. Statistical Tools

A Descriptive Analysis will be used for the general analysis. The tools used will be mean and standard deviation, and the data will be tabulated by calculating frequency to obtain summary tables.

The Perceived Stress Scale (PSS) is the most widely used psychological instrument for measuring the perception of stress. It is a measure of the degree to which situations in one's life are regarded as stressful. The scale also includes many direct queries about current levels of experienced stress. PSS was originally developed as a 14-item scale that assesses the perception of stressful experiences by asking the respondent to rate the frequency of his/her feelings and thoughts related to events and situations that occurred over the previous month. There are also two product short forms, the PSS-4 and PSS-10, with 4 and 10 selected items respectively from the original PSS-14 form.

The hypothesis will be tested with the help of the chi-square test. It is a non-parametric test of the hypothesis. The chi-square test is also called the goodness of fit test. It describes how the observed frequencies differ from the expected frequencies.

g. Data Interpretation

The primary data collected from the sample respondents will be interpreted to provide meaning based on the research objectives and hypothesis. The information collected from the respondents within the city of Mumbai will be tabulated and analysed using SPSS.

The sample data will be analyzed, taking one variable as well as two or more variables (cross-tabulation) for better analysis and results. This will be done keeping the objectives and hypotheses of the research in mind.

h. Questionnaire

The questionnaire schedule method will be used for gathering data relevant to the research conducted among various categories of students. The data collected through the schedules from primary sources will be processed and Testing of the hypothesis will be done with the help of suitable statistical tools such as the chi-square test and t-test based on the primary data collected.

Questions are framed basis on the factors affecting stress levels among MBBS Students at Government and Private Medical Colleges

1. **Academic Workload –** The academic workload will be measured by the following criteria.
    1. Total Class Hours
    2. Time left for Self Studies / Family life balance
    3. Assignment and Project workload
    4. Examination and Practical
    5. Research Work
    6. Visit Hospital Wards for Practicals
    7. Lots of study materials to be reviewed for the study

Questions for Academic Workload are as follows

1. There is hardly any time left for self-study
2. There is hardly any gap between lectures and exam
3. There is no time for preparation for the exam
4. There are too many projects, and assignments to be completed
5. The regular lecture schedule is very tight
6. There is no scope for research work during the academic year
7. There is a lack of time to visit hospital wards for training
8. Need to prepare many study notes
9. I have weak memory and concentration
10. I have exam phobia

2. **Teachers Teaching Pedagogy and Learning** will be measured by the following criteria.

    1. Teachers teaching pedagogy is excellent
    2. Teachers do not give proper study materials
    3. No proper PowerPoint presentation was given to the students
    4. Teachers often discriminate between male and female students
    5. Teachers lack sufficient teaching experience
    6. Teachers' teaching methodology is difficult and complex
    7. I felt fearful, Anxious, Nervous, or worried when interacting with subject teachers

8. Teachers seek undue favor from students

Questions for the Teachers Teaching Pedagogy and Learning are as follows:

1. The teacher's teaching methodology is too good and easy to understand
2. We did not have an expert subject teachers
3. There is a lack of sufficient study materials available on the subjects
4. Teachers often show different behavior to fellow students
5. We do not have experience teachers
6. Teachers teach in the most difficult and complex manner
7. I felt fearful, Anxious, Nervous, or worried when interacting with subject teachers
8. Teachers seek undue advantages and favor from the students
9. I annoyed with the teacher's behavior
10. Unable to concentrate on the subjects

3. **Gender Difference – The measures to analyze the gender difference are as follows**

1. Academic performance of Male and female students
2. Health issues of male and female students
3. Female students are more introvert
4. Male students participate more in social activities than female students in the college
5. Students faced cultural and religious barriers
6. Conflicts between male and female

Questions for Gender differences are as follows

1. I find no difference between male and female student's performance
2. Do you feel the study burden on your health
3. Do you feel any incompetency in the studies with other students
4. Do you participate actively in the college activities
5. Do you face Cultural and religious barriers during your studies
6. There are often conflicts between male and female students on different issues
7. Do you feel more introvert
8. I am a mood swing personality and find difficulty in making decisions

9. Ragging or humiliation put me on suicidal ideation
10. Needed help to cope with social situations (e.g., cigarettes, alcohol or medications, superstitious objects)

4. **Differences in Academic levels will be measured by the following criteria.**

1. Level of study experience
2. Academic performance
3. Adaptability to Environment
4. Health Issues
5. Motivation level
6. Dealing with patients and their relatives
7. High tolerance capacity
8. Managing challenging situations effectively
9. Coordination with Hospital staff

Questions for differences in Academic levels are as follows

1. I feel more confident after performing well in the previous semester's exam.
2. My academic performance has improved over the period of time.
3. In the second year / 3rd year/ 4th year, we become more adaptable to the college environment.
4. Health Issues - Constipation, loose bowels, diarrhea, Nausea, gas, or indigestion
5. Feeling tired or having low energy
6. Sleeping disorder
7. High motivation
8. Able to deal with patients' mental trauma
9. Feel more responsible for study and duty
10. Difficult in coordination with Hospital staff

5. **Financial Problems will be measured by the following criteria.**

1. Family Head Annual Income
2. Occupational job stability
3. Another source of Income
4. Loan and borrowing

Questions for Financial Problems are as follows

1. My family income is not satisfactorily
2. There is no job stability for the parents
3. We have no other source of income
4. We have heavy borrowing from the bank for housing loans, and education loans.
5. I have to repay the loans and reduce the family's financial burden
6. At the time, I Seek financial help from friends
7. Parents have to bear the additional cost of hostel fees
8. Parents have to pay my Mess fees and other misc. expenses
9. I have to bear my financial emergencies needs through my saving
10. To overcome financial problems, I am expecting a good job placement from the college with a high salary.

7. THE SCOPE OF THE STUDY: The scope of research will cover

1. **At Macro Level** – Different medical colleges/students will be covered to analysis the level of stress, its causes, consequences, and possible remedies.
2. **At Micro Level** – The overall impact of stress on the medical students will be assessed based on primary and secondary data for the entire medical sector.
3. **Area Specific** – The research will focus on the city of Mumbai and Thane, which has a good number of medical colleges private and public.

8. SIGNIFICANCE OF THE STUDY

1. The research study will highlight the current causes of the stress factors and the status of stress levels among the students while pursuing an MBBS course from Govt. Medical College and Private Medical College, limited to Mumbai and Thane Region.
2. This research study will highlight the role of the medical college Management, Teachers, Staff, and parents in medical student life.
3. The significance of the study is to analyze the backgrounds of the students pursuing the medical course and the challenges faced by them during their studies.
4. The significance of the study is to analyze and highlight the gender biases faced by the students while pursuing the medical course in Govt. and Private Medical Colleges.
5. The significance of the study is to analyze the gender-wise stress level in Govt. Private Medical Colleges in Mumbai and Thane Region.

6. The significance of the study is to highlight the role of the State Government in framing education policies for medical colleges.
7. The results of this study may provide valuable information which, hopefully, will be put to good use and perhaps initiate a series of studies on stress among other professional colleges.

9. LIMITATIONS OF THE RESEARCH STUDY:

Some of the Limitations of the research study:

1. **Area Specific**: The present research is focusing on the stress factors among medical students pursuing MBBS courses in selected Govt. and Private Medical Colleges with special reference to the city of Mumbai and the Thane Region. Hence the findings of the research cannot be generalized to all India levels.
2. **Period of Study**: The research period is from 2021 and hence the findings cannot be applied to the period before this.
3. **The Mindset of Respondents**: There may be a problem with respondents' bias. The information that would be provided by the respondents cannot be cross-checked and verified by any other method.
4. **Restricted to only a sample size**: The research will be based on a sample size of 400 respondents. The results might be different when a larger sample size is covered.
5. **Focus on Quantitative Data**: The research will focus on the quantitative data and not on the quality of the data.

10. PLAN OF PROPOSED RESEARCH WORK

- Literatures Reviews – Books, Journals, Websites, Magazines, Articles, etc.
- Meetings formally MBBS medical students of Government and Private Medical Colleges to take an insight into their study and challenges faced by them.
- Observe the Medical Colleges' facilities available to the students during their studies.
- Interact with faculty and staff to understand their views related to students' behavior and study pressure on them.
- Prepare a Questionnaire based on the informal meetings with the students.

- Analysis of the questionnaire to know the factors responsible for the stress and levels of stress faced by the students using statistical tests
- Compare the study of stress levels between the selected Govt. and Private Medical Colleges and draw some conclusions.

11. CHAPTERISATION SCHEME:

The present study titled **"**A Comparative Study of Selected Government and Private Medical College Students Stress Levels Pursuing Bachelor of Medicine and Bachelor Of Surgery (MBBS) Course In Mumbai And Thane Region" is co-ordinated into six chapters as detailed below.

1. **Chapter I**: **Introduction and Conceptual background of the study:**

   Introduction, Conceptual framework, Types of stress, Causes of Stress, The positive impact of stress, The negative impact of stress, Current status of Medical Colleges in Mumbai, Profile of the Medical colleges, MBBS Admission Process, Profile of Mumbai City, Research Objectives, Research Hypothesis, Need and importance, Problem at hand and Scope of the study.

2. **Chapter II: Review of Literature**:

   This chapter is devoted to a comprehensive and critical review of earlier research studies pertaining to the current field of investigation. This chapter identifies the research gaps and also formulates research hypotheses.

3. **Chapter III: Research Methodology**:

   Covers the research methodology adopted in the present research. It covered steps involved in the research, research design, sources of data, sampling and sample size, preparation of a questionnaire, tools of data analysis, etc.

4. **Chapter IV: Role of various stakeholders in Medical Education**

   This chapter will cover a case study, and describe the overview of the role of Medical Colleges, State Government Education Policies, and the roles of various stakeholders in medical education.

5. **Chapter V: Data Collection, Interpretation & Analysis. -**

Explains the data analysis and interpretation of the primary data collected from 600 sample respondents. The data is presented with the help of suitable tables and charts.

6. **Chapter VI: Summary, Major Findings, Recommendations & Conclusion:**
   This chapter gives a capsule summary of the major results and discussions presented in chapter V along with major implications, directions for future research, and concluding observations.

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ANNEXURE

QUESTIONNAIRE ON

A STUDY OF MANAGEMENT OF STRESS AMONG MEDICAL STUDENTS

Questions are framed with the help of the Likert scale to analyze the result of the survey. This type of questionnaire is simple to tabulate and analyze. The questions in this study were designed in such a way that the research objectives could be easily met. Each objective topic is divided into several sub-questions.

- Strongly Agree – SA;
- Agree – A
- Neutral – N
- Disagree – DA
- Strongly Not Agree

Dear Respondents,

You are requested to participate in our students' stress survey conducted for academic purposes only. This questionnaire helps to understand the various type of stressors faced by MBBS students during their course of study and how its impact their academic, health and lifestyle. Rest assured that the information shared by you will remain fully confidential.

Part A – General Information

Particulars	Details
College Name	
College Address	
Gender (Male / Female)	Age:
Course Specialisation	
Year of Study (Ist Yr., II Yr., III Yr., IV Yr.	
Type of College - Govt. / Private	
Admission Through – (Open or Reserved Category)	
Hostel Student / Private Room arrangement or Mumbai local resident	
State District / Village	
Total Earning Member in the family	
Total Family members annual Income	

Occupation of the Head of the Family	
Total Nos. of Family Members	
What is the level of attendance in the class - 60%, 70%, 80%, 90%, 100%	
Grade in previous semester exam.	
Have you undergone any medical treatment in the last 3 months due to studies pressure?	**Yes / No**

Rating Scale - Strongly Agree (SA) – 5, Agree (A) – 4, Neutral (N) – 3, Disagree (DA) – 2, Strongly Disagree (SDA) – 1

	Factors causing stress among students	**(SA) 5**	**(A) 4**	**(N) 3**	**(DA) 2**	**(SDA) 1**
A	**Academic Workload**					
1	There is hardly any time left for self-study					
2	There is hardly any gap between lectures and exam					
3	There is no time for preparation for the exam					
4	There are too many projects, and assignments to be completed					
5	The regular lecture schedule is very tight					
6	There is no scope for research work during the academic year					
7	There is a lack of time to visit hospital wards for training					
8	Need to prepare many study notes					
9	I have weak memory and concentration					
10	I have exam phobia					
B	**Teachers Teaching Pedagogy and Learning**	**(SA) 5**	**(A) 4**	**(N) 3**	**(DA) 2**	**(SDA) 1**
1	Teachers' teaching methodology is too good and easy to understand					
2	We did not have an expert subject teacher					
3	There is a lack of sufficient study materials available on the subjects					

4	Teachers often show different behavior to fellow students					
5	We do not have experience teachers					
6	Teachers teach in the most difficult and complex manner					
7	I felt fearful, Anxious, Nervous, or worried when interacting with subject teachers					
8	Teachers seek undue advantages and favor from the students					
9	I annoyed with the teacher's behavior					
10	Unable to concentrate on the subjects					
C	**Gender Difference**	**(SA) 5**	**(A) 4**	**(N) 3**	**(DA) 2**	**(SDA) 1**
1	I find no difference between male and female students' performance					
2	Do you feel the study burden on your health					
3	Do you feel any incompetency in the studies with other students					
4	Do you participate actively in the college activities					
5	Do you face Cultural and religious barriers during your studies					
6	There are often conflicts between male and female students on different issues					
7	Do you feel more introvert					
8	I am a mood swing personality and find difficulty in making decisions					
9	Ragging or punishments put me on suicidal ideation					
10	Needed help to cope with social situations (e.g., cigarettes, alcohol or medications, superstitious objects)					
D	**Differences in Academic levels**	**(SA) 5**	**(A) 4**	**(N) 3**	**(DA) 2**	**(SDA) 1**
1	I feel more confident after performing well in the previous semester's exam.					
2	My academic performance has improved over the period of time.					
3	In the second year / 3rd year/ 4th year, we become more adaptable to the college					
4	Health Issues - Constipation, loose bowels, diarrhea, Nausea, gas, or indigestion					

5	Feeling tired or having low energy					
6	I have a sleeping disorder issue					
7	I have high motivation to study					
8	I can deal with patients' mental trauma					
9	I feel more responsible toward study and duty					
10	I face difficulties in coordinating with Hospital staff					
E	**Financial Problems**	**(SA) 5**	**(A) 4**	**(N) 3**	**(DA) 2**	**(SDA) 1**
1	My family income is not satisfactorily					
2	There is no job stability for the parents					
3	We have no other source of income					
4	We have heavy borrowing from the bank for housing loans, and education loans.					
5	I have to repay the loans and reduce the family's financial burden					
6	At the time, I seek financial help from friends					
7	Parents have to bear the additional cost of Hostel Fees					
8	Parents have to pay my Mess Fees and other Misc. Expenses					
9	I have to bear my financial emergencies needs through my saving					
10	To overcome financial problems, I am expecting a good job placement from the college with a high salary					

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